II. CLAIM AMENDMENTS

Please cancel claims 4, 5 and 17 without prejudice, and amend claims 1, 2, 3, 12, 18 as set forth in the following listing of the claims.

1. (Currently amended) A method for processing signals received from different radio interfaces of communication systems, comprising steps in which:

- a carrier-frequency signal is received from a radio interface,

- the signal at the carrier frequency is bandpass-filtered,

- the filtered signal at the carrier frequency is amplified,

- a RX mixing signal at the receive frequency is generated,

- a complex baseband signal is generated from the received carrier-frequency signal by mixing it with the RX mixing signal,

- the baseband signal generated is low-pass filtered,

- the baseband signal generated is amplified or attenuated prior to analog-to-digital conversion,

- the baseband signal is converted to digital, and

- the baseband signal converted to digital is processed so as to produce an information signal encoded and modulated into the received carrier-frequency signal,

- wherein said amplifying of the carrier frequency signal is performed with one and same amplifier for signals received from at least two different radio interfaces, and a gain of said amplifier is set with a program-controlled gain control signal in relation to the radio interface from which signals are received,

- said generating of the complex baseband signal is performed with one and same mixer for signals received from at least two different radio interfaces,

- said RX mixing signal is generated with a frequency synthesizer, and an output frequency of said frequency synthesizer is selected with a program-controlled frequency selection signal in relation to the radio interface from which signal are received, and

- said bandpass-filtering is performed using a pass band selected with a program-controlled pass-band selection signal in relation to the radio interface from which signals are received~~, which is tunable or adjustable by means of programming~~.

2. (Currently amended) A method for processing signals for transmission to different radio interfaces of communication systems, comprising steps in which:

- a digital baseband quadrature signal is generated on the basis of an information signal to be transmitted,

- the digital baseband quadrature signal is converted to analog,

- a TX mixing signal at ~~the~~ a transmit frequency is generated,

- a carrier-frequency transmission signal is generated from the ~~digital~~ analog baseband quadrature signal by mixing the ~~digital~~ analog baseband quadrature signal with the TX mixing signal,

- the carrier-frequency transmission signal generated is amplified, and

- the amplified carrier-frequency transmission signal is transmitted to the radio interface,

- wherein said generating of a TX mixing signal at the transmit frequency comprises for at least one radio interface dividing a frequency of an output signal generated by a TX synthesizer, and said output signal of said TX synthesizer is selected with a program-controlled frequency selection signal in relation to the radio interface to which the amplified carrier-frequency transmission signal is transmitted,

- said generating of the carrier-frequency signal is performed with one and same mixer for signals to be transmitted to at least two different radio interfaces, and

- said amplifying of the carrier frequency signal is performed with one and same amplifier for signals to be transmitted to at least two different radio interfaces, and a gain of said amplifier is set with a program-controlled gain control signal in relation to the radio interface to which the amplified carrier-frequency transmission signal is transmitted.

3. (Currently amended) A direct-conversion receiver operating at different radio interfaces of communication systems, comprising:

- antenna means for receiving a carrier-frequency signal from a radio interface,

- a bandpass filter (2) for filtering the carrier-frequency signal,

- a first receiver amplifier (4) for amplifying the filtered carrier-frequency signal,

- means (10, 11) for generating ~~an~~ a RX mixing signal at a receive frequency,

- mixing means (5) for generating a complex baseband signal from the received signal by means of the RX mixing signal,

- a low-pass filter (6) for filtering the baseband signal,

- a second amplifier (7) for amplifying the baseband signal,

- an analog-to-digital converter (8) for converting the baseband signal to digital, and

- means (9) for processing the baseband signal converted digital so as to produce an information signal encoded and modulated into the received signal,

- wherein said first receiver amplifier is common for amplifying signals received from at least two different radio interfaces and comprises a gain control input for receiving a program-controlled gain control signal adapted to set the gain of said first receiver amplifier in relation to the radio interface from which signals are received,

- said mixing means for generating the complex baseband signal is common for processing signals received from at least two different radio interfaces,

- said means for generating a RX mixing signal comprises an output frequency selection input for receiving a program-controlled output frequency selection signal adapted to select the output frequency of said means for generating a RX mixing signal in relation to the radio interface from which signals are received, and

- said bandpass-filter (2) comprises a pass band selection input for receiving a program-controlled pass band selection signal adapted to select a pass band of said band pass filter in relation to the radio interface from which signals are received ~~is tunable or adjustable by means of programming~~.

4. (Canceled)

5. (Canceled)

6. (Previously presented) The receiver of claim 3, wherein the means (10, 11) for generating a mixing signal at the receive frequency comprises an RX synthesizer (10, S1) and controllable frequency divider (11, N1) for dividing the frequency of the output signal generated by the RX synthesizer.

7. (Previously presented) The receiver of claim 6, wherein said frequency divider is arranged so as to divide the output signal of the RX synthesizer always by at least two in order to generate an RX mixing signal.

8. (Previously presented) The receiver of claim 3, further comprising means (6, FX3) for controlling the cut-off frequency of low-pass filtering in order to perform channel filtering according to the selected radio interface.

9. (Previously presented) The receiver of claim 3, further comprising means for implementing channel filtering realized in a digital manner.

10. (Previously presented) The receiver of claim 3, further comprising means (7, GX2) for controlling the gain of the second amplifier.

11. (Previously presented) The receiver of claim 3, wherein the signal processing path comprises substantially the same components for connecting to the different radio interfaces.

12. (Currently amended) A direct-conversion transmitter operating at different radio interfaces of communication systems, comprising:

- means (9) for generating a digital baseband quadrature signal on the basis of an information signal to be transmitted,

- means for implementing channel filtering realized in a digital manner,

- a digital-to-analog converter (14) for converting the digital baseband quadrature ~~transmission~~ signal to analog,

- a controllable low-pass filter (15, FX4) for filtering the analog baseband transmission signal in order to perform channel filtering according to the radio interface selected,

- a synthesizer (13, 12) for generating a TX mixing signal at the transmit frequency,

- mixing means (16) for producing a signal at the carrier frequency from the filtered analog baseband transmission signal by means of the TX mixing signal,

- an amplifier (17, 18) for amplifying the signal at the carrier frequency, and

- antenna means for transmitting the amplified transmission signal at the carrier frequency,

- wherein the means (13, 12) for generating a TX mixing signal at the transmit frequency comprises a TX synthesizer (13, S2) and controllable frequency divider (12, N2) for dividing the frequency of the output signal generated by the TX synthesizer, as well as an output frequency selection input for receiving a program-controlled output frequency selection signal adapted to select the output frequency of said means for generating a TX mixing signal according to the radio interface selected,

- said mixing means for producing a carrier frequency signal is common for processing signals for transmission in at least two different radio interfaces, and

- said transmitter amplifier is common for amplifying carrier frequency signals for transmission to at least two different radio interfaces and comprises a gain control input for receiving a program-controlled gain control signal adapted to set the gain of said transmitter amplifier according to the radio interface selected.

13. - 15. (Cancelled)

16. (Previously presented) The transmitter of claim 12, wherein said frequency divider is arranged so as to divide the TX

synthesizer's output signal always at least by two in order to generate a TX mixing signal.

17. (cancelled)

18. (Currently amended) The transmitter of claim 12, further comprising a power amplifier section (18) in said amplifier, and a control input for receiving a control signal to said power amplifier section ~~means (18, BX)~~ for controlling the operating frequency band of the ~~transmitter~~ power amplifier.

19. (Previously presented) The transmitter of claim 12, further comprising a bandpass filter for filtering the amplified transmission signal at the carrier frequency, and means for selecting the pass band of the transmitter bandpass filter (3, FX2) so that it corresponds to the transmission frequency.

20. (Previously presented) The transmitter of claim 12, wherein the signal processing path comprises substantially the same components for connecting to the different radio interfaces.